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my onions, as a sample of the general size.

Note—The onions alluded to in the preceding paper, sent by Mr. Macdonald, were much admired by all the members who were present at the meeting.

The Committee for Prizes unanimously voted to Mr. Macdonald an extra medal for this communication; and it was thought advisable that it should be printed in the first number of the Memoirs, that every gardener may have it in his power to try the mode of cultivation which he has recommended during the ensuing season. It will give much satisfaction to the Society if those who make trials will communicate the result to Mr. Neill, Secretary.

Method practised in Germany of bleaching Virgin Wax.

(From the Annales des Arts et Manufactures.)

In Germany they bleach virgin wax rather by simple exposure to the air than by chemical means. This method indeed is longer, but also the most economical.

In following this process, they begin by melting the yellow wax in water, and when melted it is left to deposite for a longer or shorter time. The water and the dregs precipitate slowly to the bottom of the vessel, afterwards the wax is wound round a cylinder, which is turned in the water. By this means it is divided into very thin flakes, of from three to four inches long. They also use for dividing the wax large shears, which are put in motion by the simple mechanism of a water-wheel.

When the wax is thus divided it is put upon vast frames, furnished with linen cloth, and left exposed to the immediate action of the air and light. These two agents combined, gradually take out the colouring substance, and with the greater facility from its being reduced into thin flakes. In this manner, at about the end of three months, the wax is rendered completely white.

When the heat of the sun is too strong, the wax will become tough, and will unite, unless care be taken to turn it two or three times a day, and to moisten it when the water is judged to be entirely evaporated. But it is always observed that when the sun has been ardent enough to melt the wax, it is no longer capable of acquiring the degree of whiteness of which it was previously susceptible. But as a great quantity of water, which will be spread over its surface, must necessarily injure it, sheds are disposed at the sides of the places where it is spread. Lastly, in order to inclose the wax with facility, grooves are made in the frames which are in the open air, and by which the platforms containing the wax are expeditiously drawn out.

When the wax has lost its yellow colour it is collected in order to be re-melted; the finest and driest parts keep at the top, the thick part precipitates in the tub, and settles between the water and the good wax. This separation occasions a waste in the wax of about one per cent.

This operation terminated, the wax is again formed into thin flakes, and exposed, as before, to the power of the sun, where it is left until it is judged to be completely bleached; it is then formed into lumps, which are once more exposed to the sun, in order to give the wax its highest lustre. When once the wax has acquired the utmost degree of whiteness of which it is susceptible, if it is left any longer exposed to the light of the air, its brilliancy far from being augmented, will, on the contrary, be considerably diminished.

In following the second method, they begin by melting the yellow wax, and when it is melted they pour into it a solution of lime in oxygenated muriatic acid. Care must be taken that the solution be neuter; that is, that it have not an excess of acid; for if the muriatic acid predominate it will render the wax lumpy. After the solution is poured in, the mixture must be strongly agitated until the wax becomes completely white. By this process the acid seizes on the colouring substance, and speedily destroys it, but less perfectly than by the simultaneous action of the light and the air.

This last process has the advantage over the first, of being more expeditious, of not requiring spacious premises, and of being practicable at all seasons; but it has also the disadvantage of being less economical, and of never producing such a brilliant white.

Memoir on the Employment of Oxygen Gas in various Cases of Suffocation. By M. Sementini.

(From the Annales de Chimie.)

The object of the work which I now

offer, is to propose a quick and efficacious remedy for recovering drowned persons, and for various cases of suffocation in general. Suffocation is the state in which life is suspended, so as to destroy all power of sense or motion; but which we may reasonably expect to see restored.

This state may be expressed by comparison with the motion of a pendulum, which ceases only from its oscillations being mechanically suspended, while none of the pieces which compose the machine are at all injured. Now, when there is only a want of sense and motion, caused by an absolute suspension of the same faculty, we may hope for the return of life by giving to it such an action that it may resume its natural state, as the pendulum resumes its functions, when a mechanical impulse has restored its oscillation.

But the animal condition is such, that the suspension of life speedily becomes dangerous, and apparent death soon changes to reality, on account of the facility with which the humours in a little time are altered.

Now, suffocation may be produced by causes which act either upon the general system, or directly upon the organ of respiration; but I here mean to speak only of those cases which, deriving their origin from any given cause, have immediately occasioned such a derangement of the functions of the lungs as to produce apparent death.

Having lately directed my attention to the contrivance called fumigatory boxes, it occurred to me, that inflation being generally regarded as the most powerful method of restoring life, oxygen gas might be employed instead of atmospheric air. I afterwards became acquainted with Dr. Goodwin's work, published in London in 1788, and I found that this author had tried oxygen gas, administered by inflation, to animals drowned on purpose, and that he had ascertained its efficacy. I repeated his experiments, in which I succeeded, and which confirmed the confidence that I felt in this method.

But the case of an animal drowned on purpose, and saved by the inflation of oxygen gas that had been previously prepared, is very different from that of a man in the same state, whom we wish to restore by this means. In the first case, every thing is arranged for the experiment, and the oxygen gas is prepared before hand; but when it is required to afford speedy assistance to a person just taken out of the water, too much expedition cannot be used in extracting the gas, and in administering it. To accomplish this, which has not yet been attained, a simple method is necessary, by which the oxygen gas can be immediately obtained, and by which it can be instantaneously introduced into the lungs while yet warm. The object of this memoir is to make public the method which I have invented.

In order to succeed in this undertaking, I availed myself of the lights of modern chemistry, and of Berthollet's important discovery, that is to say, the *super-oxygenated muriate* of potash, which, among its wonderful properties, has that of containing nearly one-third of its weight of oxygen, which, on being exposed to a moderate heat, is reduced to the state of gas, and it is on this remarkable property that my method is founded.

If inflation, therefore, be the principal resource in certain cases of suffocation, if for this purpose the employment of oxygen gas be preferable to the atmospheric air, and if the machine that I propose be capable of developing the oxygen gas in a very short time, and of introducing it immediately into the lungs, I shall not have employed my humble talents without use in the cause of suffering humanity.

A part of a column of wood is ballasted with lead, upon which is screwed a brass retort; to the foot of the column is attached a spirit-lamp, the flame of which surrounds the belly of the retort; to the same column is applied a flexible leather pipe, which, at the other extremity, unites with the bellows. These bellows terminate with a portion of a tube of elastic gum, which is furnished with a brass plate, that may be adapted to the human mouth. The bellows are provided with a valve. The operation of inflating the gas is effected as follows. The column is placed upon a small table, where the suffocated person lies in a horizontal position; the *superoxygenated muriate of potash* is introduced into the retort, which is then screwed to the column. The lamp is lighted, and the bellows are applied to the mouth, while an assistant holds the nostrils with his fingers. The oxygen gas begins to be developed; and, as in the interior of the cylinder the aperture of the retort communicates with that of the tube, this gas, having no other vent, is carried into the bellows, which are kept open on purpose.

When it is supposed that the bellows are full, or nearly so, they are closed; and it being impossible for the gas to return, the valve being shut, it is compelled to enter the mouth and lungs of the patient. This process, which is several times repeated, without neglecting other known remedies, forms the essential part of the very simple method which I propose.

I have had the satisfaction of saving with this apparatus a man drowned on the sea coast, who in a very little time was restored to life.

Improvement in the management of the Dairy.

Sir John Sinclair, in his "Account of the systems of husbandry adopted in the more improved districts of Scotland," relates that the most important improvement that has recently taken place in regard to the management of the dairy, is the invention of cast iron milk dishes, by Mr. Braid of the Shots iron works, near Whitburn in West Lothian. These dishes are made of cast iron softened by annealing in charcoal, turned smooth inside, then laid over with a cover of tin, to prevent the iron coming in contact with the milk, the rust of which might injure it. The outside of the dish is painted over to prevent rust also. The advantages of these dishes are that they preserve that proper degree of coolness which is necessary to cause the milk to throw up the cream, that they are easily kept clean by a little chalk on a woollen rag, and that they may be re-tinned at a small expence. But it is proper to remark here that these iron dishes, so greatly recommended by the president of the board of agriculture, are compared only with wooden dishes, and not with the earthen-ware pans.

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